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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/542,910  
Filing Date: July 20, 2005  
Appellant(s): ZHOU ET AL.

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Dicran Halajian  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 01 May 2009 appealing from the Office  
action mailed 05 December 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2002 / 0005832

Katase

17 January 2002

2003 / 0137521

Zehner et al.

24 July 2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Katase (US 2002 / 0005832) in view of Zehner et al. (hereinafter "Zehner" US 2003 / 0137521).

3. As pertaining to **Claim 1**, Katase discloses (see Fig. 1 and Fig. 2) an electrophoretic display panel (A; see Page 1, Para. [0004]), for displaying a picture corresponding to image information (see Page 1, Para. [0009]-[0010] and Page 3, Para. [0058]), comprising:

an electrophoretic medium (2) comprising charged particles (3);

a plurality of picture elements (11C);

a first and a second electrode (201, 104) associated with each picture element (11C) for receiving a potential difference (see Page 3, Para. [0062]-[0066]); and  
drive means (100A, see Fig. 3),

the charged particles (3) being able to occupy a position being one of extreme positions near the electrodes (201, 104) and intermediate positions in between the electrodes (201, 104) for displaying the picture (see Fig. 2, Fig. 4A-4B, and

Fig. 16A-16C, for example; also see Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]),

and the drive means (100A) being arranged for controlling the potential difference of each picture element (11C; again, see Fig. 3 along with Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079])

to be a reset potential difference having a reset value (i.e., a reset voltage) and a reset duration (i.e., a reset time) for enabling particles (3) to substantially occupy one of the extreme positions (see Page 5 through Page 6, Para. [0094]-[0109] in conjunction with Fig. 2, Fig. 4A-4B, and Fig. 16A-16C, and Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]), and subsequently

to be a picture potential difference for enabling the particles (3) to occupy the position corresponding to the image information (again, see Page 5 through Page 6, Para. [0094]-[0109] in conjunction with Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]),

wherein

the drive means (100A) are further arranged for controlling the reset potential difference of each picture element (11C) of at least a number of the picture elements (11C) to have a reset duration (again, see Page 5 through Page 6, Para. [0094]-[0109] in conjunction with Fig. 13 and Fig. 14, and Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]); and the drive means (100A) are further arranged for controlling the reset potential difference of each picture element (11C) to enable particles (3) to occupy the extreme position which is closest to the

position of the particles (3) which corresponds to the image information (again, see Page 5 through Page 6, Para. [0094]-[0109] in conjunction with Fig. 2, Fig. 4A-4B, and Fig. 16A-16C, and Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]; the reset potential difference can enable particles to occupy either extreme position).

Katase does not explicitly state that the drive means (100A) are further arranged for controlling the reset potential difference of each picture element (11C) of at least a number of the picture elements (11C) to have an additional reset duration. However, Katase discloses that the purpose of the reset potential difference is to enable the particles (3) to substantially occupy one of the extreme positions of the near the electrodes (201, 104; again, see Page 5 through Page 6, Para. [0094]-[0109] in conjunction with Fig. 2, Fig. 4A-4B, and Fig. 16A-16C, and Page 3, Para. [0062]-[0066] in conjunction with Page 3 through Page 4, Para. [0068]-[0079]). Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the reset potential difference can have any additional reset duration and will still accomplish the goal of the reset potential difference.

Further, Zehner discloses (see Fig. 8 through Fig. 10 and Fig. 11A-11B) an electrophoretic display panel for displaying a picture corresponding to image information (see Page 1, Para. [0002] and [0005]-[0006] and Page 5, Para. [0066]-[0067]) comprising drive means arranged for controlling a reset potential difference of each picture element of at least a number of picture elements to have a variable reset

duration (see Page 14, Para. [0150] and Page 16 through Page 17, Para. [0169]-[0175]) and the drive means are further arranged for controlling the reset potential difference of each picture element to enable particles to occupy the extreme position which is closest to the position of the particles which corresponds to the image information (again, see Page 14, Para. [0150] and Page 16 through Page 17, Para. [0169]-[0175] of Zehner; the reset potential difference can enable particles to occupy either extreme position). The inventions of Katase and Zehner are in the same field of endeavor. Further, Zehner provides a means of reducing the remnant voltage of an electrophoretic display (see Abstract in conjunction with Page 1, Para. [0002]). Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Katase with the teachings of Zehner. As such, it would have been obvious to one of ordinary skill in the art that the drive means (100A) of Katase can be further arranged for controlling the reset potential difference of each picture element (11C) of at least a number of the picture elements (11C) to have an additional reset duration.

4. As pertaining to **Claim 3**, Katase discloses (see Fig. 1 and Fig. 2) that each picture element (11C) is one of the number of the picture elements (11C).



**(10) Response to Argument**

The applicant has argued, specifically with respect to independent **Claim 1**, that none of the references relied upon by the examiner, namely Katase (US 2002 / 0005832) and Zehner et al. (US 2003 / 0137521), considered alone or in combination teach or fairly suggest a "drive means" wherein "the drive means is are further arranged for controlling the reset potential difference of each picture element of at least a number of the picture elements to have an additional reset duration; and the drive means are further arranged for controlling the reset potential difference of each picture element to enable particles to occupy the extreme position which is closest to the position of the particles which corresponds to the image information." The examiner respectfully disagrees.

Firstly, the examiner would like to direct attention to the specific language used to define the claimed invention. As recited in **Claim 1**, the invention claimed by the applicant is directed to "An electrophoretic display panel... comprising... charged particles... and drive means, the charged particles being able to occupy a position being one of extreme positions near the electrodes and intermediate positions in between the electrodes... the drive means being arranged for controlling the potential difference of each picture element... wherein the drive means are further arranged for controlling the reset potential difference... to have an additional reset duration... and the drive means are further arranged for controlling the reset potential difference... to enable particles to occupy the extreme position which is closest to the position of the particles which

corresponds to the image information.” The examiner would like to point out that the applicant has claimed an “arrangement” for the “drive means” in an electrophoretic display panel. That is, rather than positively claiming a specific functionality of the “drive means,” the applicant has merely claimed the manner in which the “drive means” is “arranged” and the possible consequences of “arranging” the “drive means” in the manner claimed. The claim language does not positively recite any explicit or implicit limitation that states that the “drive means” actually performs a function in the claimed invention. Instead, the applicant is clear in claiming “the drive means being arranged for controlling” and “the drive means are further arranged for controlling,” and with such an “arrangement,” some result may be produced. Thus, it stands to reason that any “drive means” for an electrophoretic display panel disclosed in the prior art that is “arranged” in the manner claimed by the applicant and that could produce the results as claimed by the applicant could anticipate or render obvious the “arrangement” of **Claim 1**. Simply stated, the limitations of **Claim 1** recite that which the “drive means” is “arranged” to do, rather than that which the “drive means” actually does.

Furthermore, with respect to the specific language of **Claim 1**, it should be noted that the applicant has claimed that “the drive means are further arranged for controlling the reset potential difference of each picture element to enable particles to occupy the extreme position which is closest to the position of the particles which corresponds to the image information.” Again, the applicant has not positively claimed that the particles actually occupy the extreme position which is closest to the position of the particles which corresponds to the image information;” rather, the applicant has merely claimed

that the "drive means" are "arranged" to "enable" the particles to occupy this extreme position. Further still, there is no structure or function claimed for actually determining which extreme position is the "closest to the position of the particles which corresponds to the image information." It is understood that the "extreme position which is closest to the position of the particles which corresponds to the image information" may change depending on the "image information." Thus, while the "drive means" may be "arranged" to "enable" the particles to occupy the extreme position "which is closest to the position of the particles which corresponds to the image information," the claim does not mention any way of definitively producing this result and no way of affirming that this result has been produced by the "drive means." In an electrophoretic display device comprising an electrophoretic medium containing charged particles and first and second electrodes bounding the electrophoretic medium and receiving a potential difference to move the charged particles, it is well understood that the position of the particles can be divided into three possible positions: a position closest to the first electrode, a position closest to the second electrode, and an intermediate position between the two electrodes. Further, it is well understood that the position of the particles depends on the potential difference applied to the first and second electrodes (i.e., positively charged particles will migrate to a negatively charged electrode and negatively charged particles will migrate to a positively charged electrode). Thus, it stands to reason that a "drive means" that is "arranged" to "enable" the charged particles to occupy either or both extreme positions can "enable" the charged particles to occupy the extreme

position that "is closest to the position of the particles which corresponds to the image information."

Further still, the claimed "additional reset duration" seems to be an entirely subjective and arbitrary duration that, while described in the specification as a type of "overdrive" duration for enabling the particles to occupy an extreme position, is not tied to a particular duration and is left open to a wide variety of interpretations. That is, the claimed "reset duration for enabling particles to substantially occupy one of the extreme positions" and, the claimed "additional reset duration" which supposedly is initiated to "enable particles to occupy the extreme position" are subjective values tied to a personal interpretation of vaguely mentioned experimental results as described in the specification and disclosed by the applicant's representative (i.e., simple measurements using a timer, applying different voltages across the electrodes and observing the display, using some type of detectors, etc., as recited by the applicant's representative in Remarks dated 11 September 2008). In fact, the specification does not provide any concrete manner of measuring or verifying that there is a difference between the position of the particles as a result of initiating the "reset duration" and as a result of initiating the "additional reset duration" (i.e., there is no concrete manner of identifying the difference between particles that "substantially occupy one of the extreme positions" and particles that actually "occupy one of the extreme positions." Thus, it stands to reason that the "additional reset duration" can be any arbitrary duration implemented to "enable" the particles "occupy an extreme position."

With respect to the prior art considered by the examiner, Katase clearly discloses (see Fig. 1, Fig. 2, Fig. 3, and Fig. 4) an electrophoretic display panel (A)... comprising... charged particles (3)... and drive means (100A; see Fig. 3, in particular), the charged particles (3) being able to occupy a position being one of extreme positions near the electrodes (201, 104) and intermediate positions in between the electrodes (201, 104; see Fig. 2 and Fig. 4)... the drive means (100A) being arranged for controlling the potential difference of each picture element (11C)... wherein the drive means (100A) are further arranged for controlling the reset potential difference... to enable particles (3) to occupy the extreme position which is closest to the position of the particles (3) which corresponds to the image information." Katase does not explicitly recite the implementation of "an additional reset duration." However, the claimed "additional reset duration" is known in the art and is explicitly disclosed by Zehner (see Fig. 8 through Fig. 10 and Fig. 11A-11B) as a means of enabling the charged particles to occupy an extreme position in order to improve an electrophoretic display. Katase and Zehner both disclose a "drive means" that is "arranged" for controlling the reset potential difference of each picture element to "enable" particles to occupy either of the extreme positions. Thus, no matter which extreme position is "closest to the position of the particles which corresponds to the image information," both Katase and Zehner disclose a "drive means" that is "arranged for controlling the reset potential difference" to "enable" the particles to occupy this extreme position. Further, because the "extreme position which is closest to the position of the particles which corresponds to the image information" will change depending on the "image information," any "drive means" that is

"arranged" to "enable" particles to occupy an extreme position can obviously "enable" particles to occupy this extreme position, even if this position of the particles is purely coincidental. In any case, Katase and Zehner both show that it is well known in the art for a "drive means" to be "arranged" to "enable" particles to occupy an extreme position. It is clear that either extreme position can coincide with the "extreme position which is closest to the position of the particles which corresponds to the image information," depending on the "image information." Thus, it is clear that both Katase and Zehner disclose the "arrangement" claimed by the applicant. Furthermore, the combined invention of Katase and Zehner renders obvious the use of an "additional reset duration," no matter how arbitrarily defined, to enable the particles to occupy an extreme position.

For these reasons, the examiner contends that the rejection of **Claims 1 and 3** should be maintained.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jason Mandeville/

Examiner, Art Unit 2629

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/Amare Mengistu/

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